REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 2-7, 23-24, and 37-38 are now in the application. Claims 1, 8-22, and 35-36 have been canceled. Claims 2, 4-6, 23-26, 32-34 have been amended. Claims 37-38 have been added.

Claim 37 replaces the main claims 1 and 22. As such, claim 37 is supported in the original claims 1 and 22, and in the specification. Similarly, claim 38 is supported in original claim 36 and in the original claims 1 and 22. The dependencies of the dependent claims have been adapted.

Rejection 35 U.S.C. § 101

Claim 37 is directed to a method of testing an integrated circuit. Tangible and concrete information is entered into the system and the neural network is adapted to approximate the integrated circuit. The result of the adaptation is a set of test patterns – a concrete, tangible intermediate result. These are then applied to the integrated circuit and the resulting behavior is tested relative to certain test criteria. This, then, leads to the generation of a new set of test patterns. The new set of test patterns, again, is a tangible, concrete result of the method. Finally, the integrated circuit is tested with the new set of test patterns. The final step is entirely tangible.

Similarly, claim 38 is a computer-readable medium with the method of claim 37 in the form of computer-executable instructions. The instructions, when executed by the computer, perform the method of testing the integrated circuit.

Reconsideration of the rejection under 35 U.S.C. § 101 is respectfully urged.

Rejection 35 U.S.C. § 102

We now turn to the art rejection, in which all of the claims have been rejected as being anticipated by Yao (*Evolving Artificial Neural Networks*, 87 IEEE 9) under 35 U.S.C. § 102. We respectfully traverse on the basis of the amended claims.

The focus of the Yao paper is outlined in the abstract, p.1423. There, the author explains that the paper deals with the relationship and the combination of neural networks (ANN) and evolutionary algorithms (EA), with underlying search operators for EAs, and with suggestions for further development. The EA, as described by Yao, is similar to the concept of using a neural network and a genetic algorithm. Yao does not deal with a measurement system and how such a system can be applied to an integrated circuit.

The concept proposed by the reference has to do with how a genetic algorithm (EA) can be used to improve the learning phase of the neural network. For that purpose, the weight values and the learning rules, for example, are manipulated and adapted. See, for example, items 1 and 2 in the abstract and Fig. 13 on page 1439. There, the learning rules are iteratively developed and evaluated. Similarly, the "weights" are constantly adapted by returning the fitness information regarding the tasks. In other

words, the Yao concept is based on the use of the genetic algorithm to help in adapting the neural network during its learning phase.

This is a different concept from the claimed invention. Here, applicant proposes adapting the neural network and then to apply the genetic algorithm to further processing.

Claim 37 is clearly not anticipated by Yao. The claimed method is directed to a method of testing an integrated circuit. First, a neural network is adapted to approximate the integrated circuit. Steps (a) to (d) define the adaptation. Then the thus-adapted neural network is subjected to further test patterns, which are tested and compared with certain criteria. Only those test patterns that satisfy the criteria are introduced into the set of test patterns that are loaded into the automatic test equipment (ATE). The ATE then tests the integrated circuit with the surviving set of test patterns and determines circuit outputs triggered by those test patterns. After further testing of the outputs against certain test criteria, yet another set of test patterns is generated by using a genetic algorithm.

Claim 38 is substantially similar to claim 37 in that it claims a computer product with instructions for implementing the method. Claim 38 is not anticipated by Yao.

With regard to item 3) in Yao's Abstract, the "future research directions" concentrate on the control system. There is no detailed mention of a measurement system or the application of the theoretical foundation to a measurement and testing system. Applicant, on the other hand, describes and claims very specific applications of the

method according to the invention. The remaining claims are neither anticipated by nor obvious over Yao.

In summary, neither Yao nor any other reference of record, whether taken alone or in any combination, either shows or suggests the method sequence of claim 37. Claim 37 is, therefore, patentable over the art and since all of the dependent claims are ultimately dependent thereon, they are patentable as well.

In view of the foregoing, reconsideration and allowance of claims 2-7, 23-24, and 37-38 are solicited.

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January 2, 2007

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